Smart Automated Home Application Using IoT

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Abstract- *This paper deals with the monitoring and controlling home appliances via smart phone using wi-fi and controlling through juiceSSH app. By the virtue of blooming automation industry and wireless connectivity, all the devices within the home can be connected. Today's world is moving to digitalization where everything is made easy and comfortable for people i.e., young youth as well as senior citizen. The user can handle any electronic device from any place such as on and off of light, fan, AC, water pump, gardening of water. This paper clarifies that, monitoring of home appliances through wireless using Arduino uno and controlling by the juiceSSH App.*

Keywords- Arduino Uno, JuiceSSH App,Wi-Fi

I. INTRODUCTION

The paper proposes an efficient implementation for IoT (Internet of Things) used for monitoring and controlling the home appliances both via Wi-Fi. Home automation system uses the portable devices as a user interface. They can communicate with home automation network through an Internet gateway, by means of low power communication protocols like Wi-Fi etc. This project aims at monitoring and controlling home appliances via Smartphone using Wi-Fi as communication protocol and microcontroller as server system. The user here will move directly with the system through a web-based interface over the web, whereas home appliances like lights, fan are remotely controlled through easy app. The server will be interfaced with relay hardware circuits that control the appliances running at home. The communication with server allows the user to select the appropriate device. The server communicates with the corresponding relays. If the web affiliation is down or the server isn't up, the embedded system board still will manage and operate the appliances domestically and using android mobile phone. By this we provide a climbable and price effective Home Automation system using IOT and Smartphone.

II. EXISTING METHOD

Advancement in IoT based application has become the state-of-the art technology among the researcher due to the availability of Internet everywhere. To make the application more user friendly, web based and android based technologies have gained their importance in this cutting edge technology. In this paper, smart energy efficient home automation system is proposed that can access and control the home equipments from every corner of the world. For this system, Internet connectivity module is attached to the main supply unit of the home system which can be accessed through the Internet. For wireless connectivity, the static IP address is used. Home automation is based on multimodal application that can be operated using voice recognition command of the user using the Google Assistant or through a web based application.

III. PROPOSED METHOD

Thus, main objective of this work is to make our home automation system more secure and intelligent. The concept of Internet of Things (IoT) requires the seamless connectivity of millions of heterogeneous devices. In today's World, implementation of IoT based smart home has drawn a huge attraction and become a prominent area of research. This research work presents an approach for smart home automation using IoT that can be controlled wirelessly. Home automation system means monitoring and controlling of home appliances remotely using the concept of internet of things (IOT). In this method we use mobiles or computers to control the basic home appliance and make it function through the designed web page with internet connection/local area network (LAN) servers. This type of home is also known as smart home. The concept of applying automation in the sectors of housing is selling like hot cake. Western countries have welcomed the concept of automation into their homes with open arms. Our country is keeping up with the pace of modernization too. Different approaches to automating homes have been implemented. The best among this is home automation system using IOT. IOT provides the feasibility of operating the home automation system from anywhere around the world using internet. It reduces use of excessive or unnecessary human efforts and improves the standard of living of the people in our society. The aim of this paper is to develop home automation system based on IOT using Wi-Fi based microcontroller. As scope of technology is widening every day, we are making our tech advance in mobile, robotics, Machine Learning, then why an exception for our home. Today's houses are gradually transferring from ordinary/human's input-based appliances to smart/IOT enabled appliances to be controlled remotely. At Present, existing

home automation systems use technology that is limited to only that device. So, in a nutshell, we are making our devices IOT enabled not our homes. As far as this paper is concerned, NodeMCU (ESP8266) microcontroller along with Relays is used to control electrical switches remotely from the server which is built on Node.js. User can control switches using a Web Application after authenticating.

IV. BLOCK DIAGRAM

In this paper the block diagram of the project and design aspect of independent modules are considered. Block diagram is shown in Figure below

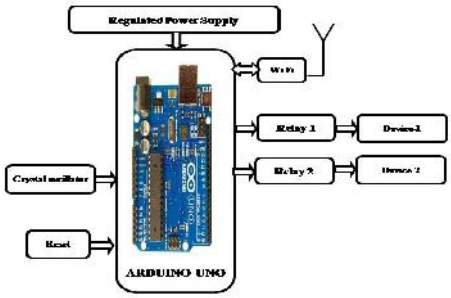

Fig: Block Diagram

V. RESULT ANALYSIS

Below diagram shows when all the components are connected on board

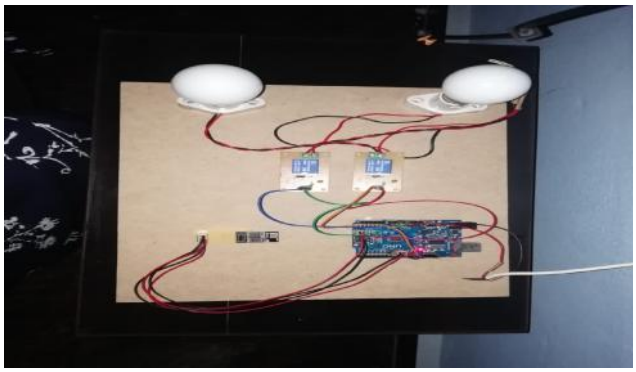

Fig: Shows when all the components are connected on board

- Next it shows first bulb glows when ‘a’ input is given

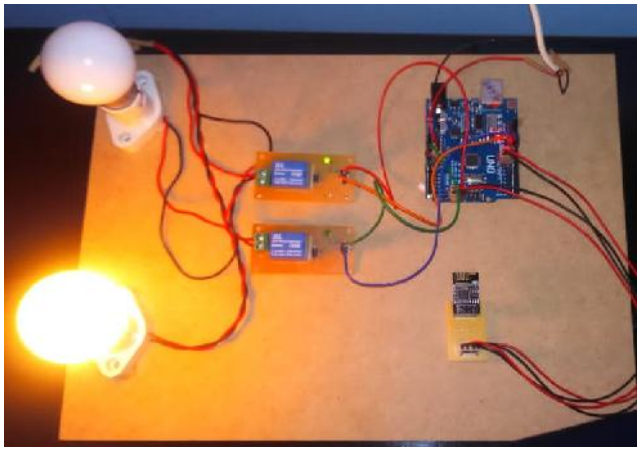

Fig: Shows first bulb glows when ‘a’ input is given

- It shows second bulb glows when ‘c’ input is given

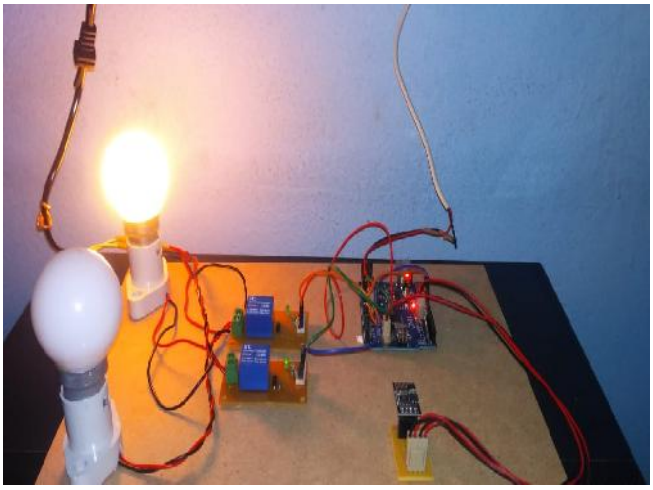

Fig: shows second bulb glows when ‘c’ input is given

- It shows two bulbs’ glows when both ‘a’ and ‘c’ inputs are given

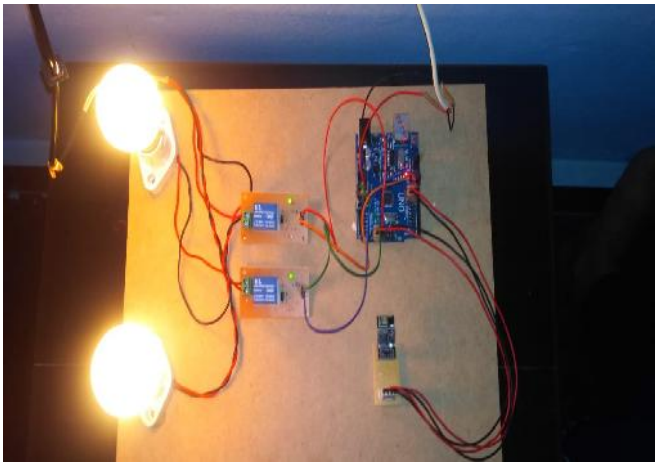

Fig: Shows two bulbs’ glows when both ‘a’ and ‘c’ inputs are given

VI. CONCLUSION

The paper “SMART AUTOMATED HOME APPLICATION USING IoT” was designed such that devices were controlled through Android phone over Wi-Fi technology.

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced ICs with the help of growing technology, the project has been successfully implemented. Thus, the project has been successfully designed and tested

VII. FUTURE SCOPE

Our paper “SMART AUTOMATED HOME APPLICATION USING IoT” is mainly intended to design Android based wireless Wi-Fi controlled devices. WI-FI Module, Relays board are interfaced to the microcontroller. The data received by the WI-FI module from web application fed to the microcontroller. The Microcontroller acts accordingly to switches on the electrical appliances. To achieving the task the controller is loaded with a program written using Embedded C programming language. This paper can be extended using high efficiency GSM module using which the devices can be controlled from unlimited distance. The GSM module gives the SMS messages of devices status intimation through SMS. The GPS module can also give the location of the device operated were detected in case of emergencies.

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